UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
TRAN, THIEN D

rton E. Showalter
ker Botts L.L.P.
001 Ross Avenue
Dallas, TX 75201-2980

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DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *21 December 2000*.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-25* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Regarding claim 4, the limitation "IDSL line interface comprises eight IDSL line

interfaces" is not comprehensible.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the
> United States before the invention thereof by the applicant for patent, or on an international application
> by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
> title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4.   Claims 1-3, 5-10, 12, 14-17, 19-25 are rejected under 35 U.S.C. 102(e) as being

anticipated by Levin et al (U.S Patent No. 6,625,777 B1).

Regarding claims 1, 22, 23 Levin discloses a DSL line card (IDSL line card,

herein after IDSL line card), figure 1, comprising:

at least one IDSL line interface having an adjustable bit rate, col.5 lines 35-40,

comprising:

a processing unit (microcontroller, hereinafter microcontroller), col.15 lines 30-35,

operable to control the bit rate associated with the at least one line interface, col.11

lines 50-58, the microcontroller comprising:

a microprocessor (processor), col.15 lines 30-40; and

a memory, col.15 lines 35, associated with the processor and storing a

modules of software to perform data rate control (rate adapter application), the

rate adapter application operable, when executed on the processor, col.15 lines

30-40, to:

measure the received SNR from a channel (receive an error level)

associated with transfer of data through the at least one IDSL line interface, col.5

lines 12-20;

determine that the received error level exceeds a target SNR (maximum

error level), col.12 lines 13-30; and

in response to determining that the maximum error level is exceeded,

adjust the bit rate for the at least one IDSL line interface and determine that a

resulting error level meets or falls below the maximum error level, col.11 lines 10-

60.

Regarding claim 2, Levin discloses the error level is a redundancy level (CRC

error level), col.9 lines 50-65.

Regarding claim 3, Levin discloses that the rate adapter application is further

operable to adjust the bit rate, in response to determining that the maximum error level

is exceeded, by increasing or decreasing the bit rate, col.11 lines 20-40.

Regarding claim 5, Levin discloses that the rate adapter application is further

operable, when executed on the processor, to access a data rate table (bit rate table),

col.12 lines 1-10, to determine an adjusted bit rate, col.6 lines 15-35.

Regarding claim 6, Levin discloses that the rate adapter application is further

operable, when executed or. the processor, to apply a default bit rate if the error level

associated with transfer of data through at least one IDSL line interface exceeds the

maximum error level and has traversed an associated bit rate table, col.5 lines 20-45.

Regarding claim 7, Levin discloses a method for communicating data according

to ISDN protocol, col.4 lines 28-50, comprising:

connecting a first IDSL line interface to a second IDSL line interface, the second

IDSL line interface at a location remote from the first IDSL line interface at a central

office, the first IDSL line interface having a data rate of the line card at the central office

(first bit rate), and the second IDSL line interface having a data rate of the line card at

the remote station (second bit rate), col.5 lines 35-40;

transmitting data between the first IDSL line interface and the second IDSL line

interface, figure 1;

determining that a redundancy of error correction (CRC, herein after CRC) level

associated with the data transfer exceeds a predetermined acceptable level, col.9 lines

50-65; and

adjusting the second bit rate until a CRC level associated with subsequent data

transfer between the first and second IDSL line interfaces meets or falls below the

predetermined acceptable level, col.11 lines 30-40.

Regarding claim 8, Levin discloses that connecting a first IDSL line interface to a

second IDSL line interface comprises connecting an IDSL line interface at a customer's

premises to an IDSL line interface at a telecommunications central office, figure 1.

Regarding claim 9, Levin discloses that the second IDSL line interface is located

at a customer's premises, figure 1.

Regarding claim 10, Levin discloses that the first IDSL line interface is located at

a customer's premises, figure 1.

Regarding claim 12, Levin discloses that adjusting the second bit rate comprises

accessing a bit rate table, col.12 lines 1-5.

Regarding claim 14, Levin discloses method of establishing data communication

according to ISDN protocol, col.15 lines 9-15, comprising:

connecting a first IDSL line interface to a remote computer (first end) of an ISDN line, figure 1;

connecting a second IDSL line interface to a central office (second end) of the ISDN line, figure 1;

setting a bit transfer rate of the first IDSL line interface to a first bit rate, col.11 lines 11-40;

setting a bit transfer rate of the second IDSL line interface to a second bit rate, col.11 lines 11-40;

transmitting data between the first and second IDSL line interfaces, figure 1;

determining a redundancy for error correction (CRC, hereinafter CRC) level associated with the data transmission, col.11 lines 35-40;

comparing the determined CRC level to an acceptable error level, col.9 lines 50-65;

adjusting the bit transfer rate of the second IDSL line interface in response to at least a determination based on the comparison that the CRC level associated with the data transmission exceeds the acceptable error level, col.5 lines 55-65; and

repeating the steps of transmitting data, figure 8,

determining a CRC level, comparing the determined CRC level, and adjusting the bit transfer rate until the determined CRC level equals or falls below the threshold level, figure 8.

Regarding claim 15, Levin discloses that connecting the first IDSL line interface connecting the first IDSL line interface to a first end of an ISDN line comprises

connecting an IDSL line interface located at a customer's premises to the first end of an

ISDN line, figure 1.

Regarding claim 16, Levin discloses that connecting the first IDSL line interface

to a first end of an ISDN line comprises connecting an IDSL line interface located

remote from a customer's premises to the first end of an ISDN line, figure 1.

Regarding claim 17, Levin discloses that adjusting the bit transfer rate comprises

accessing a bit rate table, col.12 lines 1-10.

Regarding claim 19, Levin discloses that adjusting the bit transfer rate of the

second IDSL line interface comprises adjusting, by the second IDSL line interface, the

bit transfer rate of the second IDSL line interface, col.4 lines 25-50.

Regarding claim 20, Levin discloses that adjusting the bit transfer rate of the

second IDSL line interface comprises adjusting, by a computer located remote from the

second IDSL line interface, the bit transfer rate of the second IDSL line interface, col.11

lines 15-40.

Regarding claim 21, Levin discloses a system for facilitating communication of

data according to ISDN protocol, col.15 line 13, comprising:

a first means located proximate a first location and a second means located

proximate a second location for modulating and demodulating data exchanged between

the first and second locations, figure 1;

a line means connecting the first means and the second means for carrying data

exchanged between the first and second locations according to ISDN protocol, col.15

line 13; and

a controller means for determining that data exchanged between the first and

second means has an associated error level that exceeds a desired level and in

response adjusting a bit rate associated with the second means until the associated

error level reaches or falls below a threshold level, figure 8.

Regarding claim 24, Levin discloses that the controller comprises a personal

computer, figure 1.

Regarding claim 25, Levin discloses that the controller comprises a

microcontroller stored on a line card, the line card also storing the first IDSL line

interface, col.15 lines 5-50.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 4, 11, 13, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Levin et al (U.S Patent No. 6,625,777 B1) in the view of Sweitzer et al (U.S Patent

No. 6,570,915 B1)

Regarding claims 13, 18 Levin discloses limitations of the base claim. However,

Levin does not disclose that transmitting data comprises transmitting at least an HDLC

frame. Sweitzer discloses transmitting data comprising at least an HDLC frame, figure

1. Therefore, it would have been obvious to one having ordinary skill in the art to the

feature of transmitting at least an HDLC frame in the DSL system of Levin so that the system can work in variety of different transmission protocols.

Regarding claim 4, Levin discloses limitations of the base claim. Levin does not disclose that at least one IDSL line interface card comprises eight IDSL line interfaces. However, it would have been an obvious matter design choice to have that at least one IDSL line interface card comprises eight IDSL line interfaces, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 11, Levin discloses limitations of the base claim. Levin does not disclose that the second IDSL line interface is DSLAM, figure 1. However, it would have been obvious to one having ordinary skill in the art to have the feature of DSLAM in the system of Levin to provide DSL services for multiple users at the central office.

Conclusion

7.   Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

STEVEN NGUYEN
PRIMARY EXAMINER

Thien Tran